

**[0068]** As described so far, an electron beam apparatus having an electron analyzer according to the present invention has an illumination optical system consisting of lenses and deflecting means for illuminating electrons at a specimen, the electrons being produced and accelerated from an electron gun, an imaging optical system for imaging electrons transmitted through the specimen positioned inside the magnetic field of the objective lens, a detection system for detecting electrons, and energy selection means for energy-dispersing electrons and selecting electrons having a certain energy. This apparatus is characterized in that the accelerating voltage of the electron gun is varied to shift the energy of electrons and that signals supplied to the lenses and deflection means of the illumination optical system are corrected using amounts of correction each obtained by multiplying an energy shift value corresponding to a variation in the accelerating voltage by a corrective coefficient.

**[0069]** As a result, where an energy shift is caused by varying the accelerating voltage of the electron gun, shift of the illuminated region on the specimen and variations in the illumination brightness of the electron beam are prevented if the operating conditions of the illumination lens system deviate. Furthermore, the strength of the magnetic field of the objective lens formed ahead of the specimen can be corrected by calibrating the corrective current values and appropriately adjusting the values of the currents flowing through the lenses and deflection coils in the illumination optical system.

**[0070]** Having thus described my invention with the detail and particularity required by the Patent Laws, what is desired protected by Letters Patent is set forth in the following claims.